Small Active Readout Device for Dose Spectra from Energetic Particles and Neutrons (DoSEN)

Completed Technology Project (2013 - 2016)

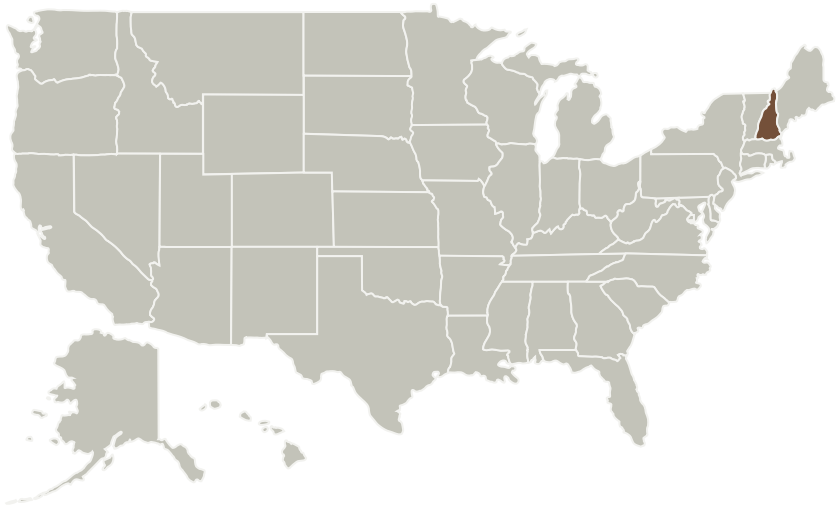
Project Introduction

DoSEN is an early-stage space technology research project with the sole objective of developing the concept and demonstrating the proof-of-principle of a space radiation instrument possessing unprecedented performance capabilities while requiring only minimal resources (mass, volume, power, cost). DoSEN combines two advanced complementary radiation detection concepts that present fundamental advantages over traditional radiation detectors, but requires proof-of-concept so that DoSEN may be readily implemented on future missions. DoSEN not only measures the energy but also the charge distribution (including neutrons) of energetic particles that affect human (and robotic) health in a way not presently possible with current radiation instruments. Thus, DoSEN lays the foundation for a new generation of radiation instruments for the next phase of NASA's human and robotic exploration.

Anticipated Benefits

DoSEN not only measures the energy but also the charge distribution (including neutrons) of energetic particles that affect human (and robotic) health in a way not presently possible with current radiation instruments. Thus, DoSEN lays the foundation for a new generation of radiation instruments for the next phase of NASA's human and robotic exploration.

Primary U.S. Work Locations and Key Partners



Project Image Small Active Readout Device for Dose Spectra from Energetic Particles and Neutrons (DoSEN)

Table of Contents

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Responsible Program:

Space Technology Research Grants

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Organizations Performing Work	Role	Type	Location
University of New Hampshire-Main Campus	Supporting Organization	Academia	Durham, New Hampshire

Primary U.S. Work Locations
New Hampshire

Images

11964-1363027950598.jpg
Project Image Small Active Readout Device for Dose Spectra from Energetic Particles and Neutrons (DoSEN)
(https://techport.nasa.gov/image/1693)

Project Website:

https://www.nasa.gov/directorates/spacetech/home/index.html

Project Management

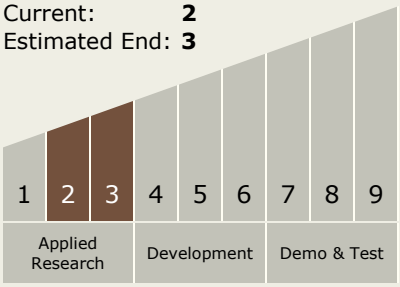
Program Director:
Claudia M Meyer

Program Manager:
Hung D Nguyen

Principal Investigator:
Nathan A Schwadron

Technology Maturity (TRL)

Start: **2**
Current: **2**
Estimated End: **3**



Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.5 Radiation
    - TX06.5.5 Monitoring Technology